

WHAT IS CLAIMED IS:

1. An integrated circuit structure, comprising:
one or more integrated circuit elements operable to generate an
electromagnetic field when an electric current is applied to the integrated circuit
5 element;
an encapsulating compound substantially surrounding the one or more
integrated circuit elements, the encapsulating compound comprising:
a packaging material; and
an electromagnetic field-attenuating material operable to attenuate the
10 electromagnetic field emitted by one or more of the integrated circuit elements, the
electromagnetic field-attenuating material disposed within at least a portion of the
packaging material.
2. The structure of Claim 1, wherein one or more of the integrated circuit
15 elements comprise a conductive connector coupling portions of the integrated circuit
structure.
3. The structure of Claim 2, wherein the conductive connector comprises
a bond wire.
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4. The structure of Claim 2, comprising at least two conductive
connectors, the electromagnetic field-attenuating material of the encapsulating
compound operable to attenuate electromagnetic coupling of the conductive
connectors.
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5. The structure of Claim 1, wherein:
a first integrated circuit element comprises a first trace operable to carry an electrical signal within the structure;
a second integrated circuit element comprises a second trace operable to carry
5 an electrical signal within the structure; and
the electromagnetic field-attenuating material of the encapsulating compound is operable to attenuate electromagnetic coupling of the first trace and the second trace.
- 10 6. The structure of Claim 1, wherein the electromagnetic field-attenuating material is operable to attenuate an electromagnetic field emitted outside the structure by the one or more integrated circuit elements.
7. The structure of Claim 1, wherein the electromagnetic field-attenuating
15 material comprises a ferrite material.
8. The structure of Claim 1, wherein the electromagnetic field-attenuating material comprises a plurality of electromagnetic field-attenuating particles mixed into at least a portion of the packaging material of the encapsulating compound, one
20 or more of the plurality of the particles operable to attenuate electromagnetic interference by attenuating electromagnetic fields.
9. The structure of Claim 8, wherein the electromagnetic field-attenuating particles are oriented to substantially optimally attenuate electromagnetic fields
25 emitted by one or more integrated circuit elements.
10. The structure of Claim 1, wherein the packaging material comprises plastic.

11. A method for forming an integrated circuit structure, comprising:
forming one or more integrated circuit elements operable to generate an
electromagnetic field when an electric current is applied to the integrated circuit
element;
- 5 forming an encapsulating compound substantially surrounding the one or more
integrated circuit elements, the encapsulating compound comprising:
a packaging material; and
an electromagnetic field-attenuating material operable to attenuate the
electromagnetic field emitted by one or more of the integrated circuit elements, the
10 electromagnetic field-attenuating material disposed within at least a portion of the
packaging material.
12. The method of Claim 11, wherein one or more of the integrated circuit
elements comprise a conductive connector coupling portions of the integrated circuit
15 structure.
13. The method of Claim 12, wherein the conductive connector comprises
a bond wire.
- 20 14. The method of Claim 12, wherein the integrated circuit structure
comprises at least two conductive connectors, the electromagnetic field-attenuating
material of the encapsulating compound operable to attenuate electromagnetic
coupling of the conductive connectors.

15. The method of Claim 11, wherein:

a first integrated circuit element comprises a first trace operable to carry an electrical signal within the structure;

5 a second integrated circuit element comprises a second trace operable to carry an electrical signal within the structure; and

the electromagnetic field-attenuating material of the encapsulating compound is operable to attenuate electromagnetic coupling of the first trace and the second trace.

10 16. The method of Claim 11, wherein the electromagnetic field-attenuating material is operable to attenuate an electromagnetic field emitted outside the structure by the one or more integrated circuit elements.

15 17. The method of Claim 11, wherein the electromagnetic field-attenuating material comprises a ferrite material.

18. The method of Claim 11, wherein:

20 the electromagnetic field-attenuating material comprises a plurality of electromagnetic field-attenuating particles, one or more of the plurality of the particles operable to attenuate electromagnetic interference by attenuating electromagnetic fields; and

the method further comprises mixing the electromagnetic field-attenuating particles into at least a portion of the packaging material of the encapsulating compound.

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19. The method of Claim 18, further comprising orienting the electromagnetic field-attenuating particles to substantially optimally attenuate electromagnetic fields emitted by one or more integrated circuit elements.

20. An electrical device comprising an integrated circuit structure, the integrated circuit structure comprising:

one or more integrated circuit elements operable to generate an electromagnetic field when an electric current is applied to the integrated circuit
5 element;

an encapsulating compound substantially surrounding the one or more integrated circuit elements, the encapsulating compound comprising:

a packaging material; and

an electromagnetic field-attenuating material operable to attenuate the
10 electromagnetic field emitted by one or more of the integrated circuit elements, the electromagnetic field-attenuating material disposed within at least a portion of the packaging material.